

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

SCIENTIFIC APPLICATIONS &  
RESEARCH ASSOCIATES (SARA), INC.,

Plaintiff,

v.

ZIPLINE INTERNATIONAL, INC.,

Defendant.

Case No. 22-cv-04480-JSC

**ORDER RE: CLAIM CONSTRUCTION**

Re: Dkt. Nos. 37, 41, 42, 44

Plaintiff sues Zipline for alleged infringement of U.S. Patent No. 7,606,115 (the '115 patent) and trade secret misappropriation. (Dkt. No. 1.)<sup>1</sup> Before the Court is the parties' claim construction dispute over the term "noise" as used in claim 1 of the '115 patent. Having carefully considered the parties' briefing and submitted evidence, and with the benefit of oral argument on July 14, 2023, the Court ADOPTS Plaintiff's construction. The term "noise" is not indefinite.

**BACKGROUND**

The '115 patent is titled "Acoustic Airspace Collision Detection System." (Dkt. No. 1 at 6.) Its abstract describes:

An acoustic collision detection system that enables an aircraft to detect an approaching target, recognize the potential for collision and change course to maintain a safe separation distance, with or without operator invention. The acoustic collision detection system consists of an array of acoustic probes and a digital signal processor which receives acoustic data from the approaching target. The digital signal processor is configured to receive acoustic data from the array of acoustic probes; filter out noise and its own acoustic signals; extract the acoustic signals emanating from the approaching target; calculate the intensity, the bearing and the bearing angle rate of change of the approaching target, and determine whether the aircraft and the

<sup>1</sup> Record citations are to material in the Electronic Case File ("ECF"); pinpoint citations are to the ECF-generated page numbers at the top of the documents.

approaching target are on a potential collision course.

'115 patent, abstract. The patent further elaborates on the disclosed technology's components:

The technology consists of an acoustic probe array and a digital signal processor which receives detected target acoustic data received by the acoustic probe array. The acoustic probe array utilizes windscreens and shock absorbers to remove the effects of wind noise and platform vibration.

'115 patent, col. 2 ll. 41-46.

The invention claims a system for piloted and unmanned aircraft that uses sound emitted from approaching aircraft to detect approaching aircraft, assess the risk of collision, and avoid collision. '115 patent, col. 1 ll. 16-22. Claim 1 of the '115 patent states:

1. An acoustic collision detection system for avoiding a potential collision between an aircraft and an approaching target comprising:

an array of acoustic probes;

a digital signal processor configured to receive acoustic data from the array of acoustic probes, wherein said digital signal processor filters out noise and its own acoustic signals; extracts the acoustic signals emanating from the approaching target, calculates the intensity, the bearing and the bearing angle rate of change of the approaching target, and determines whether the aircraft and the approaching target are on a potential collision course.

'115 patent, col. 5 ll. 47 – col. 6 ll. 10.

The parties dispute whether the term “noise” as used in claim 1 of the '115 patent is indefinite. Their proposed constructions are set forth below:

Claim	Claim Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
1	“noise”	Not indefinite.	Indefinite, lacks reasonable certainty as to its scope.

Zipline argues the term “noise” is indefinite because it cannot be construed with reasonable certainty, which renders claim 1 and its dependent claims invalid. (Dkt. No. 37 at 3.) Plaintiff disagrees, arguing the claim term's scope is clear when read in light of the '115 patent's specification. *Id.*

## LEGAL STANDARD

A patent is presumed valid. 35 U.S.C. § 282. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). The party challenging a patent’s validity has the burden of proving indefiniteness by clear and convincing evidence. *Dow Chem. Co. v. Nova Chems. Corp. (Can.)*, 809 F.3d 1223, 1227 (Fed. Cir. 2015); *see also Microsoft Corp. v. I4I Ltd. P’ship*, 564 U.S. 91, 95 (2011) (“[A] patent shall be presumed valid and the burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity. We consider whether § 282 requires an invalidity defense to be proved by clear and convincing evidence. We hold that it does.” (cleaned up)).

35 U.S.C. § 112 requires claims to particularly point out and distinctly claim the subject matter regarded as the invention. *Nautilus*, 572 U.S. at 901 (2014). Though “absolute precision is unattainable[,]” “a patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them.” *Id.* at 909-10 (cleaned up). “Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014). A claim is sufficiently definite if it provides objective boundaries for those of skill in the art. *Id.* at 1371.

“[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012). General principles of claim construction apply when evaluating indefiniteness. *HZNP Medicines LLC v. Actavis Labs. UT, Inc.*, 940 F.3d 680, 688 (Fed. Cir. 2019). Claim terms are given the ordinary and customary meaning to a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). The claim language is “of primary importance” when determining the bounds of the claimed invention. *Id.* at 1312. “The specification necessarily informs the proper construction of the claims.” *Id.* at 1316. Extrinsic evidence may elucidate relevant art, but such evidence is only considered within the context of intrinsic

evidence. *Id.* at 1317-19. “Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995).

### DISCUSSION

Zipline argues claim 1 of the ’115 patent is indefinite because the intrinsic record fails to provide objective guidance as to the meaning of “noise.” Zipline insists the plain and ordinary meaning of “noise” is inherently subjective absent objective delineation of the term’s scope because one person’s unwanted noise can be another person’s desired signal. Zipline offers extrinsic evidence in the form of expert testimony to demonstrate a person of ordinary skill in the art (POSITA) would not be able to understand with reasonable certainty from the intrinsic evidence 1) the difference between “noise” and a host aircraft’s own acoustic signals, and 2) what signals constitute “noise.” (Dkt. No. 42 at 10-11.)

As a threshold matter, “[i]t is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history” because “intrinsic evidence is the most significant source of the legally operative meaning of the disputed claim language.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.”); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (same). In most cases, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term, and in such cases, it is inappropriate to rely on extrinsic evidence. *Vitronics*, 90 F.3d at 1583. Moreover, where intrinsic evidence resolves ambiguity, it is improper for extrinsic evidence, such as expert testimony, to introduce ambiguity. *Finjan, Inc. v. Cisco Sys., Inc.*, 837 F. App’x 799, 806 (Fed. Cir. 2020); *see also Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1342 (Fed. Cir. 2015) (“A party cannot transform into a factual matter the internal coherence and context assessment of the patent simply by having an expert offer an opinion on it. The internal coherence and context assessment of the patent, and whether it conveys claim meaning with reasonable certainty, are questions of law. The meaning [a POSITA]

would attribute to [a claim term] in light of its use in the claims, the disclosure in the specification, and the discussion of this term in the prosecution history is a question of law.”) Here, the intrinsic record resolves any ambiguity as to the meaning of “noise.”

The ’115 patent claims an acoustic collision detection system comprised of acoustic probes and a digital signal processor that “filters out noise and its own acoustic signals” and “extracts the acoustic signals emanating from the approaching target” to “determine[] whether the aircraft and approaching target are on a potential collision course.” ’115 patent, col. 6 ll. 1-10. There are three kinds of inputs the digital signal processor receives from the acoustic probes: acoustic signals emanating from the host aircraft, acoustic signals emanating from approaching aircraft, and “noise.” ’115 patent, col. 5 ll. 47 – col. 6 ll. 10. The digital signal processor filters out “noise” and the host aircraft’s own acoustic signals to assess the risk of collision using only the acoustic signals generated by approaching aircraft. ’115 patent, col. 2 ll. 25-32, col. 5 ll. 47 – col. 6 ll. 10.

The term “noise,” as used in claim 1, is not indefinite and plainly refers to signals extraneous to the acoustic signals emanating from the host aircraft or approaching aircraft. This construction provides an objective baseline from which to understand the term’s scope that aligns with the claimed system’s purpose, which is to avoid collisions through acoustic detection of approaching aircraft. ’115 patent, col. 1 ll. 16-22, col. 2 ll. 25-32. The scope of “noise” is not subjective in this context because it does not depend on a person’s tastes or opinions. *Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017). Instead, the term’s scope depends on the digital signal processor’s objective determination of the source of the signal—a characteristic inherent to the data itself. As in *Sonix*, the specification provides examples of “noise,”<sup>2</sup> along with criteria sufficient for a skilled artisan to determine whether a signal is “noise” within the meaning of claim 1. *Id.* at 1379. If a signal is not the host aircraft’s own acoustic signal or an acoustic signal emanating from approaching aircraft, then it is “noise.”

Because the claim language and specification resolve any ambiguity surrounding the term

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<sup>2</sup> “Wind noise” (’115 patent, col. 2 ll. 43-45), “noise produced by external mechanical vibrations of the acoustic probe” (’115 patent, col. 4 ll. 15-16), and “noise created by [] turbulence” (’115 patent, col. 4 ll. 19-20).

“noise,” it would be improper for the Court to rely on Zipline’s extrinsic evidence to introduce ambiguity. *See Finjan*, 837 F. App’x at 806. Even if the Court were to consider Zipline’s extrinsic evidence, the ambiguity Zipline’s expert testimony introduces either conflicts with or is resolved by the specification. Zipline’s expert claims the distinction between a host aircraft’s own acoustic signals and “noise” would “confound a [POSITA], who would understand the claim’s reference to ‘its own acoustic signals’ to refer to acoustic signals generated by the aircraft. It is common in this field to refer to such acoustic signals as ‘noise,’ but the fact that the patent does not do so would confound a [POSITA].” (Dkt. No. 43 ¶ 33.) This distinction is not a legitimate basis for confusion. The claim language and specification are clear: the term “noise,” in the context of claim 1 of the ’115 patent, excludes a host aircraft’s own signals. Zipline’s extrinsic evidence is therefore “clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history,” and discounted as a result. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005); *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995) (“In other words, evidence extrinsic to the patent and prosecution history, such as expert testimony, cannot be relied on to change the meaning of the claims when that meaning is made clear by those documents.”) For the same reason, Zipline’s expert testimony claiming a POSITA would be uncertain of what signals constitute “noise” is accorded no weight. As explained above, the intrinsic evidence demonstrates “noise,” within the meaning of claim 1 of the ’115 patent, encompasses any signal that is not the host aircraft’s own acoustic signal or an acoustic signal emanating from approaching aircraft.

### CONCLUSION

The Court ADOPTS Plaintiff’s construction. The term “noise” within the meaning of claim 1 of the ’115 patent is not indefinite.

This Order disposes of Docket Nos. 37, 41, 42, 44

**IT IS SO ORDERED.**

Dated: July 14, 2023

  
JACQUELINE SCOTT CORLEY  
United States District Judge